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Author(s): Chen, Yu
Huang, Lianjie

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Microseismic monitoring of CO₂-injection-induced seismicity

Yu Chen, Lianjie Huang

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Objectives

Microseismic monitoring of CO₂-injection-induced seismicity:

- Studying moment tensors of microseismic sources
- Imaging fracture zones and subsurface structure
- Obtaining three-dimension seismic velocity model and improved moment tensors

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Outline

- Introduction
- Adaptive moment-tensor joint inversion
- Reverse-time migration
- Full-waveform inversion
- Conclusions

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Introduction

- Carbon Capture, Utilization and Storage (CCUS) for reducing the greenhouse gas emission
- CO₂ injection for Enhance Oil Recovery (EOR)
- Monitoring CO₂ reservoir for long-term storage
- Microseismic monitoring: low cost and high efficient

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Introduction

3. Full-waveform inversion of moment tensors and seismic velocity model

- To improve the seismic velocity model and moment tensor inversion simultaneously

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Outline

- Introduction
- **Adaptive moment-tensor joint inversion**
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